

## FORD EEC-IV DIAGNOSTIC ANALYZER KASTAR NO. 273A

### INSTRUCTIONS FOR HOOK-UP AND OPERATION OF KASTAR FORD EEC-IV SELF DIAGNOSTIC ANALYZER

The Kastar Ford EEC-IV Self Diagnostic Analyzer is an easy to use device which enables the user to access the diagnostic codes stored in the vehicle's EEC-IV computer. It is necessary, however, to observe some basic precautions when using the Diagnostic Analyzer so as to prevent damage to the instrument as well as the vehicle's electronic circuits and/or components. These precautions are:

1. Make sure the ignition key is on the "off" position prior to hooking up or removing the Diagnostic Analyzer from the vehicle's electrical system. (Unless instructed otherwise in these guidelines.)
2. Turn off all electrical loads -- heater - A/C blower fan, radio, lights, etc.
3. Make sure the Diagnostic Analyzer and it's various leadwires are routed away from hot surfaces and/or moving or rotating parts of the engine. (For example: exhaust manifolds, fan, alternator, etc.)
4. Always double check connections and polarities (as req'd) to make sure the installation is made according to the instructions and diagrams provided with the instrument.
5. Make sure the vehicle is in "park", parking brake is applied, and wheels are blocked to prevent accidental vehicle movement during testing.

Following these precautions will ensure that you will enjoy years of safe and trouble-free use of your Kastar Ford EEC-IV Self Diagnostic Analyzer.

### HOOK-UP AND CODE READING PROCEDURE

#### A. "Key On - Engine Off" test (KOEO)

1. Locate Self Test Connectors used for hook-up of diagnostic equipment to vehicle. Attach Diagnostic Analyzer leadwires to vehicle Self Test Connectors as indicated on the diagram provided.

NOTE: The clutch must be depressed while running the KOEO test on all vehicles equipped with a 4.9 L engine.

2. Turn ignition key to "run" position.

NOTE: Do Not start engine at this time.

3. The vehicle's computer will start the diagnostic procedure at this time.

NOTE: You may hear various components such as relays, fan, etc. turn on and off at this point - this is normal.

The first indication on the Diagnostic Analyzer is a "flicker" or a very rapid flashing of the green LED indicator. This is a computer output signal used by other types of diagnostic equipment to identify engine size, type, etc. This first indications does not include any diagnostic codes.

4. The Kastar Ford EEC-IV Self Diagnostic Analyzer's green LED indicator will now start to flash the "On Demand" codes. These are all 2 digit codes that indicate the current status of the various components as checked by the vehicle's computer. All appropriate diagnostic codes will be displayed in order, with a short pause between each 2 digit code. After all codes have been displayed once, there will be a long pause (6-30 seconds) after which, the diagnostic codes will be repeated. The vehicle's computer will then pause for 6-30 seconds after which the LED indicator will flash once. This single flash indicates that the "On Demand" portion of the test is completed.

Example: The Diagnostic Code "32" would be displayed by the green LED in the following manner - 3 flashes - short pause - 2 flashes.

5. 6 to 30 seconds after the single flash is observed (indicating the end of the "On Demand" code output) the vehicle's computer will start to display the "Memory Codes". These are diagnostic codes that have been stored in the computer indicating various intermittent or temporary failures of components that may or may not be present during the "On Demand" check. The diagnostic codes displayed during the "Memory" portion of the test will be displayed in the same manner as in the "On Demand" test described in step 4. After completion of the "On Demand" and "Memory" tests the LED indicator will turn on and stay on.
6. Refer to the diagnostic code cross reference charts for Ford vehicles as listed in various service and repair manuals for an explanation of the various code indications. (e.g. Mitchel, Haynes, Chilton, Motor, etc.) Check out any component (s) indicated by the various diagnostic codes as not functioning properly. Repair or replace any faulty components and/or wiring. Repeat the "On Demand" test to ensure that the repairs have eliminated the fault codes as originally displayed and that the entire system checks out o.k. (the appropriate "Pass" code should be displayed by the green LED). Only after you have made the repairs as indicated should you proceed to the next step--the "Key On - Engine Running" (KOER) test.

#### B. "Key On - Engine Running" test (KOER)

1. With the ignition key in the "off" position, either disconnect jumper (see installation diagram) after completion of "On Demand" and "Memory" test or reattach the Diagnostic Analyzer leadwires except jumper wire per diagram (if removed from vehicle).

NOTE: Make sure installation precautions are followed when removing or re-attaching any leadwires.

2. After the Diagnostic Analyzer is attached with jumper wire removed, start the engine and run for 5-10 minutes or until engine is at normal operation temperatures.
- NOTE: Make sure vehicle is in "park" and wheels are blocked to prevent any accidental vehicle movement while engine is running.
3. After the engine has reached normal operation temperature, shut engine off. After waiting 10 seconds, restart the engine and run at normal idle speed.
4. Re-attach jumper wire.

5. The LED indicator will now flash once for every 2 cylinders on the engine. (2 flashes for 4 cylinder engines, etc.). This is the engine ID code. This code is for information only and is not a diagnostic code.

NOTE: The following steps (a, b, c) must be performed within 15 seconds after observing the engine ID code.

- a. On vehicles equipped with a Power Steering Pressure Switch (PSPS), the steering wheel must be turned at least 1/2 turn and released.
- b. On vehicles equipped with a Brake On/Off switch (BOO) the brake pedal must be depressed and released.
- c. On vehicles equipped with electronic transmission with overdrive, push the Overdrive Cancel Switch (OCS).
6. The LED indicator will now flash once. This is the "Dynamic Response Code". When you see this code, depress the throttle all the way down and immediately release it.

NOTE: Throttle must be depressed all the way down to ensure that accurate readings are obtained from the various components.

7. The LED will "flicker" at this point. This is the same signal as observed in step 3 of the "Key on - Engine Off" test. This is not a diagnostic code.
8. The computer will now display the "Driveability Codes" it has recorded during this portion of the test. These 2 digit codes will be displayed in the same manner as in the "On Demand" and "Memory" tests performed previously. After all codes have been displayed and recorded, shut off engine. Refer to the appropriate diagnostic code cross reference charts for an explanation of the various code indications. Check out any component (s) indicated as not functioning properly. Repair or replace any faulty components and / or wiring.
9. Re-run both "Key On - Engine Off" and "Key On - Engine Running" tests to ensure that all necessary repairs have been made to return vehicle to proper running order. (The appropriate "Pass" code should be displayed by the green LED).

#### C. Clearing "Memory" Codes

After all necessary repairs have been completed and both the KOEO and KOER tests display a "Pass" code, then any diagnostic codes stored in the EEC-IV computer's memory should be erased. Use the following procedure to accomplish this.

1. Re-run the KOEO test following the procedure outlined in Part A.
2. When the "Memory" codes begin to be displayed, disconnect the Jumper Wire from the Self Test Connector (refer to the hook-up diagram).
3. The "Memory" codes stored in the vehicle's computer will now be erased.

